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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/849,380	05/04/2001	Albert L. Carrillo	9584-0031-999	8203

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EXAMINER

SPECTOR, DAVID N

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 05/01/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/849,380

Applicant(s)

CARRILLO, ALBERT L.

Examiner

David N. Spector

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 17 March 2003 and 20 March 2003.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-82 is/are pending in the application.
- 4a) Of the above claim(s) 51-82 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1, 3, 18-20, 26, 28, and 43-45 is/are rejected.
- 7) ☐ Claim(s) 2, 4-17, 21-25, 27, 29-42 and 46-50 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 04 May 2001 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) ☐ The proposed drawing correction filed on _____ is: a) ☐ approved b) ☐ disapproved by the Examiner.
- If approved, corrected drawings are required in reply to this Office action.
- 12) ☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. §§ 119 and 120

- 13) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. _____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.
- 14) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).
- a) ☐ The translation of the foreign language provisional application has been received.
- 15) ☐ Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449) Paper No(s) 4&7.
- 4) ☐ Interview Summary (PTO-413) Paper No(s). _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☒ Other: **DETAILED ACTION**.

DETAILED ACTION***Claim Objections – Lack of Clarity***

1. Independent claims 1 and 26 (*along with all of their respective dependent claims*) are each objected to for a lack of clarity engendered by the use, therein, of the terms: "inclined first boundary" (Claim 1, Line 3; Claim 26, Line 3), and "declined second boundary" (Claim 1, Line 6; Claim 26, Line 6).

(a) While it is clear enough from the specification/drawings that applicant is using the terms "inclined first boundary" to denote a boundary which slopes upward and away in a predetermined direction, and "declined second boundary" to denote another boundary that slopes downward and away in a predetermined direction; it is also clear that nothing included in the recitation of either of these independent claims establishes a meaningful frame of reference (e.g. for the directions of up and/or down) essential for any meaningful/unambiguous interpretation of the terms "inclined first boundary" and/or "declined second boundary", as used in claims 1 and 26.

(b) The particular lack of clarity noted above is clearly illustrated by an elongated cylindrical optical element including a simple planar boundary surface which is "inclined" with respect to the longitudinal axis of the cylinder. The planar boundary surface slopes "upward" along the longitudinal axis (*e.g. from left to right with the longitudinal axis viewed horizontally*) at a non-zero angle of less than 90° (*e.g. taken from the vertical*). However, this "inclined boundary" can easily be transformed into a "declined boundary" by simply rotating the cylindrical optical element through 180° about its longitudinal axis. Consequently, neither of the terms "inclined first boundary" and/or "declined second boundary" constitutes a meaningful limitation as used in the aforesaid independent claims. Appropriate clarification/correction is required.

(c) Since the examiner understands the general intent of these claims the lack of clarity engendered by the informalities therein is being raised here under an objection to the affected claims rather than by rejections thereto under 35 U.S.C. § 112.

Claim Rejections - 35 USC § 102

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

3. Claims 1, 3, 18-20, 26, 28, and 43-45 are rejected under 35 U.S.C. 102(b) as being anticipated by Wach et al. (U.S. Patent No. 5,953,477).

(a) In regard to independent claim 1, Wach et al. discloses an energy beam guide (col. **FIG. 15**, ref. **1500**) comprising: a first region **1510** having a first refractive index (e.g. *first region 1510, being an optical fiber inherently has a refractive index; the value of which is generally greater than 1.4; for example: ~1.46 for silica (col. 42, ln. 24); ~1.77 for sapphire (col. 56, ln. 19)*), said first region having an energy beam receiving end (e.g. *at the bottom of the first region 1510 as shown in FIG. 15*) and an inclined first boundary opposing said energy beam receiving end (col. 25, ln. 40-41 and 43-45); a second region (e.g. *the gap/region between elements 1510 and 1505 shown opening to the right in FIG. 15; which, in operation, is generally filled with or immersed in an aqueous solution*) having a second refractive index that is less than said first refractive index (e.g. ~1.33) (col. 48, ln. 29-31), said second region sharing said first boundary with said first region, and having a declined second boundary opposing said first boundary (col. 25, ln. 40-41 and 43-45), where a predetermined distance separates said first and second boundaries (e.g. *clearly seen in FIG. 15*); and a third region **1505** having a third refractive index (e.g. *third region 1505, also being an optical fiber, inherently has a refractive index*), said third region sharing said second boundary with said second region (e.g. *also clearly seen in FIG. 15*). Claim 1 is therefore anticipated by Wach et al.

(b) In regard to claim 3, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 1, from which claim 3 depends. Wach et al. further discloses that in the aforesaid energy beam guide, the second refractive index is

less than the third refractive index (*e.g. the second region being filled with or immersed in an aqueous solution having a refractive index that is less than the refractive index of a solid optical material such as third region 1505*) (col. 48, ln. 29-31). Claim 3 is therefore anticipated by Wach et al.

(c) In regard to claim 18, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 1, from which claim 18 depends. Further, it is clearly seen from FIG. 15 that said inclined first boundary presents a concave shape to said energy beam (*e.g. in a frame of reference wherein light guide 1500 is oriented horizontally with end-face 1510 positioned on the left, and end-face 1505 is positioned on the right*). Claim 18 is therefore anticipated by Wach et al.

(d) In regard to claim 19, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 1, from which claim 19 depends. Further, it is clearly seen from FIG. 15 that said inclined first boundary presents a convex shape to said energy beam (*e.g. in a frame of reference wherein light guide 1500 is oriented horizontally with end-face 1510 positioned on the left, and end-face 1505 is positioned on the right*). Claim 19 is therefore anticipated by Wach et al.

(e) In regard to claim 20, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 1, from which claim 20 depends. Furthermore, because of the differences in the indices of refraction of the first, second, and third regions (*e.g. n_1 , n_2 , and n_3 , respectively, wherein $n_1 > n_2$ and $n_2 < n_3$*) of the energy guide, it is inherent that said energy beam will be refracted at said first and second boundaries. Claim 20 is therefore anticipated by Wach et al.

(f) In regard to independent claim 26, Wach et al. discloses an energy beam guide (col. FIG. 15, ref. 1500), comprising: a first region 1510 having a first refractive index (*e.g. first region 1510, being an optical fiber inherently has a refractive index; the value of which is generally greater than 1.4; for example: ~1.46 for silica (col. 42, ln. 24); ~1.77 for sapphire (col. 56, ln. 19)*); a second region (*e.g. the gap/region between elements 1510 and 1505 shown opening to the right in FIG. 15*); sharing an inclined first boundary with said first region, said second region having a second refractive index

(e.g. in operation, said second region is generally filled with, or immersed in, an aqueous solution) that is less than said first refractive index (e.g. ~ 1.33) (col. 48, ln. 29-31); and a third region **1505** sharing a declined second boundary with said second region, said third region **1505** having a third refractive index (e.g. *third region 1505, also being an optical fiber, inherently has a refractive index*), where a predetermined (variable across the diameter of the light guide **1500**) distance separates said first and second boundaries (e.g. as seen in **FIG. 15**). Claim 26 is therefore anticipated by Wach et al.

(g) In regard to claim 28, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 26, from which claim 28 depends. Wach et al. further discloses the second refractive index is less than the third refractive index (e.g. *said second region being filled with or immersed in an aqueous solution having a refractive index that is less than the refractive index of a solid optical material such as third region 1505*) (col. 48, ln. 29-31). Claim 28 is therefore anticipated by Wach et al.

(h) In regard to claim 43, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 26, from which claim 43 depends. Further, it is clearly seen from **FIG. 15** that said inclined first boundary presents a concave shape to said energy beam (e.g. in a frame of reference wherein light guide **1500** is oriented horizontally with end-face **1510** positioned on the left, and end-face **1505** is positioned on the right). Claim 43 is therefore anticipated by Wach et al.

(i) In regard to claim 44, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 26, from which claim 44 depends. Further, it is clearly seen from **FIG. 15** that said inclined first boundary presents a convex shape to said energy beam (e.g. *in a frame of reference wherein light guide **1500** is oriented horizontally with end-face **1510** positioned on the left, and end-face **1505** is positioned on the right*). Claim 44 is therefore anticipated by Wach et al.

(j) In regard to claim 45, Wach et al. anticipates all of the features/limitations of a light guide according to independent claim 26, from which claim 45 depends. Wach et al. further discloses that in the aforesaid energy beam guide, the second refractive index is less than the third refractive index (e.g. *said second region being filled with or*

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immersed in an aqueous solution having a refractive index that is less than the refractive index of a solid optical material such as third region 1505 (col. 48, ln. 29-31). Claim 45 is therefore anticipated by Wach et al.

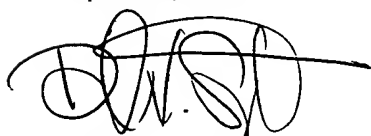
Allowable Subject Matter

4. Claims 2, 4-17, 21-25, 27, 29-42, and 46-50 are objected to as being dependent upon a rejected base claim, but could be made allowable if rewritten in independent form including all of the limitations of the revised base claim, and any intervening claims (*e.g. said base claims must be revised to overcome the objections to the independent claims noted above in this action*). The following is a statement of reasons for the indication of allowable subject matter: an energy beam guide according to the instant claims (*e.g. amended, as noted above*) would appear to be distinguished over the prior art made of record by the various structural, material, and functional features/limitations recited in claims 2, 4-17, 21-25, 27, 29-42 and 46-50 as originally drawn.

Other Remarks/Information

5. Any inquiry concerning this communication or earlier communications from the examiner should be directed to David N. Spector whose telephone number is (703) 305-1521. The examiner can normally be reached at this number Monday through Friday between 6:00 AM and 2:30 PM. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Y. Epps, can be reached on (703) 308-4883. The fax number for the organization where this application is assigned is (703) 308-7722.

April 23, 2003



David N. Spector
Primary Examiner